

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

435/258.35
Claim 1 (currently amended): A metabolite produced by a Streptomyces sp. strain selected from a Streptomyces sp. strain having all the identifying characteristics of the strain deposited with NRRL with Accession No. B-30145; and mutants thereof having of the strain deposited with NRRL with Accession No. B-30145, wherein the mutants have all the identifying characteristics of NRRL No. B-30145; and wherein the metabolite is in a non-naturally occurring environment that and exhibits activity against plant pathogenic fungi.

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Claim 2 (currently amended): The metabolite of claim 1 or claim 40, wherein the metabolite has a molecular weight [M+ H+] between about ⁸⁶⁵925 to ⁹²⁵and about 865.

units of MW dalton?

Claim 3 (currently amended): The metabolite of claim 2, wherein the molecular weight is selected from the group consisting of about 866.5, about 882.5, about 898.4, about 892.5, about 908.5 and about 924.5.

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Claim 4 (currently amended): The metabolite of claim 1 ²or claim 40, wherein the metabolite is heat and base stable, is acid labile and has a molecular weight [M+ H+] between ⁸⁶⁵about 925 to ⁸²⁵and about 865.

change claim dep.

same here
Claim 5 (currently amended): The metabolite of claim 4, wherein the molecular weight is selected from the group consisting of about 866.5, about 882.5, about 898.4, about 892.5, about 908.5 and about 924.5.

Claim 6 (currently amended): The metabolite of claim 1 or claim 40, wherein the metabolite is contained in a metabolite containing fraction of a whole broth culture of the Streptomyces sp. strain of claim 1 or claim 40 and the metabolite containing fraction has a chromatogram at 220 nm and under the conditions described for shown in Figure 3 having one or more peaks with positions and relative intensities approximately equal to the positions and relative intensities of the peaks shown in Figure 3.

Claim 7 (currently amended): The metabolite of claim 1 or claim 40, wherein the metabolite exhibits UV absorption between about 215 nm and about 220 nm.

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Claim 8 (currently amended): The metabolite of claim 1 or claim 40, wherein the metabolite is contained in a metabolite containing fraction of a whole broth culture of the Streptomyces sp. strain of claim 1 or claim 40 and the metabolite containing fraction has a ¹H Nuclear Magnetic Resonance spectra shown in spectrum under the conditions described for Figure 4 having one or more peaks with positions and relative intensities approximately equal to the positions and relative intensities of the peaks shown in Figure 4.

Claim 9 (currently amended): The metabolite of claim 1 or claim 40, wherein the metabolite is contained in a metabolite containing fraction of a whole broth culture of the Streptomyces sp. strain of claim 1 or claim 40 and the metabolite containing fraction has a ¹³C Nuclear Magnetic Resonance spectra shown in spectrum under the conditions described for Figure 5 having one or more peaks with positions and relative intensities approximately equal to the positions and relative intensities of the peaks shown in Figure 5.

Claim 10 (currently amended): The metabolite of claim 1 or claim 40, wherein the metabolite comprises one or more ~~molecules~~ chemical moieties selected from the group

consisting of propargyl alcohol segments $[C \equiv C - CH(OH)]$, an oxygenated methine carbons (~~X-CH-Y~~) or and a sugar moiety.

Claim 11 (cancelled)

Claim 12 (currently amended): A composition comprising the metabolite of claim 1 or claim 40 and a carrier.

Claim 13 (currently amended): A composition comprising more than one metabolite of claim 1 or claim 40 and a carrier.

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Claim 14 (original): The composition of claim 12, further comprising at least one chemical or biological pesticide.

Claim 15 (original): The composition of claim 13, further comprising at least one chemical or biological pesticide.

> Claim 16 (currently amended): The composition of ^{me} any of claims 12-15, wherein the composition is formulated as a formulation selected from the group consisting of a wettable powder formulation, a granule formulation, an aqueous suspension, and an emulsifiable concentrate, and a microencapsulated formulation.

Claim 17 (cancelled)

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> Claim 18 (currently amended): A method for protecting or treating plants, fruit, and roots from a fungal infections comprising applying an effective amount of the metabolite of claim 1 or claim 40 to the plant, fruit or root.

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in claim 40

Claim 19 (currently amended): The method of claim 18, wherein the fungal infections are
is caused by a fungus selected from the group consisting of Alternaria solani, Botrytis cinerea,
Rhizoctonia sp., Sclerotinia sp., and Phytophthora sp.

Claim 20 (currently amended): The method of claim 18, ~~wherein more than one~~ further
comprising applying an effective amount of one or more additional metabolites of claim 1 or
claim 40 to the plant root, or fruit Streptomyces sp. NRRL No. B-30145 strain that exhibits
activity against plant pathogenic, fungi is applied.

Claim 21 (original): The method of claim 18, wherein the metabolite has a molecular
weight [M+ H+] between about ⁸⁶⁵925 ~~to~~ and ⁸²⁵about 865.

Claim 22 (currently amended): The method of claim 21, the molecular weight of the
metabolite is selected from the group consisting of about 866.5, about 882.5, about 898.4, about
892.5, about 908.5 and about 924.5.

Claim 23 (original): The method of claim 18, wherein the metabolite is heat and base
stable, is acid labile and has a molecular weight [M+ H+] between about 925 ~~to~~ and about 865.

Claim 24 (currently amended): The method of claim 23, wherein the molecular weight is
selected from the group consisting of about 866.5, about 882.5, about 898.4, about 892.5, about
908.5 and about 924.5.

Claim 25 (currently amended): The method of claim 18, wherein the metabolite is
contained in a metabolite containing fraction of a whole broth culture of the Streptomyces sp.
strain of claim 1 or claim 40 and the metabolite containing fraction has a chromatogram at 220

nm and under the conditions described for shown in Figure 3 having one or more peaks with positions and relative intensities approximately equal to the positions and relative intensities of the peaks shown in Figure 3.

Claim 26 (currently amended): The method of claim 18, wherein the metabolite exhibits UV absorption between about 215 nm and about 220 nm.

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Claim 27 (currently amended): The method of claim 18, wherein the metabolite is contained in a metabolite containing fraction of a whole broth culture of the Streptomyces sp. strain of claim 1 or claim 40 and the metabolite containing fraction has a ¹H Nuclear Magnetic Resonance spectra shown in spectrum under the conditions described for Figure 4 having one or more peaks with positions and relative intensities approximately equal to the positions and relative intensities of the peaks shown in Figure 4.

Claim 28 (currently amended): The metabolite of claim 18, wherein the metabolite is contained in a metabolite containing fraction of a whole broth culture of the Streptomyces sp. strain of claim 1 or claim 40 and the metabolite containing fraction has a ¹³C Nuclear Magnetic Resonance spectra shown in spectrum under the conditions described for Figure 5 having one or more peaks with positions and relative intensities approximately equal to the positions and relative intensities of the peaks shown in Figure 5.

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Claim 29 (currently amended): The method of claim 18, wherein the metabolite is applied as a formulation selected from the group consisting of a wettable powders formulation, a granules formulation, an aqueous suspensions, an emulsifiable concentrates or and a microencapsulations formulation.

Claim 30 (original): The method of claim 29, further comprising applying an effective amount of at least one chemical or biological pesticide.

Claim 31 (currently amended): The method of claim 29, wherein the formulation comprises more than metabolite of claim 1 or claim 40.

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Claim 32 (currently amended): An antifungal composition comprising a metabolite produced by Streptomyces and isolated according to a method comprising:

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(a) loading a whole broth culture of Streptomyces sp. strain NRRL No. B-30145 or mutants thereof having that have all the identifying characteristics of NRRL No. B-30145 onto a non-ionic absorbent polymeric resin;

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(b) eluting the metabolite with an alcohol;

(c) screening the eluent of step (b) with a bioassay for fractions of the eluent exhibiting antifungal activity;

(d) loading the fractions of the eluent exhibiting antifungal activity of step (c) on a HPLC column; and

(e) eluting the metabolite with an organic solvent, to produce the antifungal composition.

Claim 33 (original): The composition of claim 32, wherein the eluent of step (b) is methanol or a gradient of aqueous methanol.

Claim 34 (currently amended): The composition of claim 32, wherein the ~~bioassay~~ bioassay of step (c) is selected from the group consisting of the agar diffusion assay or slide germination assay.

Claim 35 (currently amended): The composition of claim 32, wherein the organic solvent of step (e) is an acetonitrile–water gradient.

Claim 36 (currently amended): A method for protecting or treating a plants, fruit, or ~~and~~ roots from fungal infections comprising applying an effective amount of the composition of claim 32 to the plant, fruit or root.

Claim 37 (currently amended): The method of claim ~~32~~36, wherein the fungal infections are caused by a fungus selected from the group consisting of Alternaria solani, Botrytis cinerea, Rhizoctonia sp., Sclerotinia sp., and Phytophthora sp.

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Claim 38 (currently amended): The method of claim ~~32~~36, wherein the composition further comprises ~~Streptomyces sp. strain NRRL No. B-30145 is applied as a formulation~~ selected from the group consisting of a wettable powders, granules, an aqueous suspensions, an emulsifiable concentrates ~~or~~ and a microencapsulations.

Claim 39 (currently amended): The method of claim ~~32~~ 36, further comprising applying an effective amount of at least one chemical or biological pesticide.

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Claim 40 (new): The Streptomyces sp. strain of claim 1, wherein the Streptomyces sp. strain is the Streptomyces sp. strain having all the identifying characteristics of the strain deposited with NRRL with Accession No. B-30145.

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